

**AMENDMENTS TO THE SPECIFICATION**

**IN THE ABSTRACT OF THE DISCLOSURE**

**Please delete the Abstract of the Disclosure in its entirety and replace it with the attached NEW Abstract of the Disclosure located at the end of this Amendment.**

**RECEIVED**

**DEC 04 2003**

**TC 1700**

**IN THE SPECIFICATION**

**Please amend the Specification to read as follows:**

**Page 1**

**Please replace the paragraph beginning at line 3, through line 6, with the following new paragraph:**

~~This~~ The present invention relates to a technique of fabricating flat panel display devices, and more particularly to an apparatus and method for patterning an electro-luminescent display device for forming pixels into minute patterns in such an electro-luminescent display device.

**Page 3**

**Please replace the paragraph beginning at line 1 through line 17, with the following new paragraph:**

Studies of patterning pixels of the EL device have been made, but it is not yet conventionally possible to make a minute pattern and to make a

repetitive manufacturing of red, green and blue pixels for a large-scale device. For example, an organic EL material cannot be patterned by wet etching because it is liable to be melted by a solvent or moisture. For this reason, the organic EL material cannot be patterned by photolithographic techniques which are advantageous for the formation of minute patterns. A low-molecule organic EL material may be patterned using a method of independently forming each of red, green and blue materials using a minute-patterned shadow mask, but such a technique is limited by the accuracy with which shadow masks may be constructed. Such masks do not have a resolution beyond a certain level, and are difficult to accurately use over a large field due to a tension deviation, etc. of the shadow mask. A method of patterning pixels using an ink-jet injection head for a ~~high~~large-molecule or ~~polymer~~ polymeric organic EL material has been studied. However, it is difficult to form a pinhole-free thin film of less than 1000Å thickness using such a method. A scheme of providing color filters on a white EL material, or of providing a color changing medium on a blue EL material, has been considered, but such a scheme causes a large light loss due to the color filters or the color changing medium.

**Please replace the paragraph beginning at line 20, through line 22, with the following new paragraph:**

Accordingly, the present invention is directed to an apparatus and method of manufacturing an electro-luminescent display device that substantially ~~obviate~~ obviates one or more of the problems due to limitations and disadvantages of the related art.

**Please replace the paragraph beginning at line 23, bridging page 4, through line 5, with the following new paragraph:**

In accordance with the purpose of the present invention, as embodied and broadly described, in one aspect the invention includes a patterning apparatus for an electro-luminescent display, including: a molding plate provided with a plurality of convex portions and concave portions; a polymer supplying roller adjacent to the molding plate to apply an electro-luminescent material to the molding plate via rotational movement; and a molding roller attached to the molding plate to apply the electro-luminescent material on the molding plate to an adjacent substrate via rotational movement.

**Pag 4**

**Please replace the paragraph beginning at line 6, through line 11, with the following new paragraph:**

In another aspect, the present invention includes a method of patterning an electro-luminescent display, including: providing a molding plate with convex and concave portions on a molding roller; applying an electro-luminescent material to the convex portions of the molding plate; and printing the electro-luminescent material from the molding plate onto a substrate by rotating the molding roller so that the material on the convex portions contacts the substrate.

**Please replace the paragraph beginning at line 17, through line 20, with the following new paragraph:**

The accompanying drawings are included to provide a further understanding of the present invention and are incorporated in and constitute a part of this specification, ~~illustrate one embodiment of the invention~~ and together with the description serve to explain the principles of the invention.

**Pag 5**

**Please replace the paragraph beginning at line 13, through line 14, with the following new paragraph:**

Figs. 7A to Fig. 7C are sectional views showing the spreading of the pixel pattern of Fig. 6C.

**Page 9**

**Please replace the paragraph beginning at line 1, through line 14, with the following new paragraph:**

Referring now to Fig. 9A, the barrier ribs 50 are provided with a desired spacing on the glass substrate 2 in the patterning method according to the second embodiment. Between the barrier ribs 50, an indium-tin-oxide (ITO) pattern 52 used as a pixel electrode is provided. The barrier rib 50 is formed with a larger thickness or height than a pixel pattern or an organic material layer 18 to be formed on the glass substrate 2. A The material of the barrier rib 50 can be selected from any one of inorganic materials such as  $\text{SiN}_x$  and  $\text{SiO}_2$ , etc. and organic materials such as a polyimide and an acryl group, etc. Depending on the material used, the barrier ribs 50 may be formed by conventional photolithographic processes. Subsequently, as shown in Figs. 9B-9D, the EL polymer solution 16 is printed on the ITO pattern 52 using the molding roller 4 and the molding plate 6 as described above. At this time, any

membrane spread of the EL polymer solution 16 is limited by the barrier ribs 50, so that the EL polymer solution 16 is formed with a uniform thickness on the glass substrate 2. After the red (R) pixel pattern 18 is formed as shown in Fig. 9D, green and blue pixel patterns are sequentially formed in a similar manner.

**Please replace the paragraph beginning at line 18 through line 24, with the following new paragraph:**

Referring to Fig. 10, barrier ribs 40 are provided on the glass substrate 2 to cover the edges of ITO patterns 42. The barrier rib 40 covers the edge of the ITO pattern 42, a source line-44, a gate line 48 46 and a TFT 48. Also, the barrier rib 40 is formed into a larger thickness than the pixel pattern or the organic material layer 18 printed on the ITO pattern 42. A The material of the barrier rib 40 can be selected from any one of inorganic materials such as SiN<sub>x</sub> and SiO<sub>2</sub>, etc. and organic materials such as a polyimide and an acryl group, etc.